

# 1 Interview Summaries

## 1.1 Bangor Hydro

Interview Type	Utility
Interview Location	Bangor, Maine
Interview Date	November 8, 2001
Summary Date	November 11, 2001
Interviewer	Thomas Burns <a href="mailto:agismap1@maine.rr.com">agismap1@maine.rr.com</a>
Interviewed:	Reynold 'Ray' Johnson, GIS Manager: <a href="mailto:rjohnson@bhe.com">rjohnson@bhe.com</a> Mark A. LaGrasse, GIS Coordinator/Administrator: <a href="mailto:mlagasse@bhe.com">mlagasse@bhe.com</a> Gary Duplisea, GIS Project Leader: <a href="mailto:gduplisea@bhe.com">gduplisea@bhe.com</a> Edward J. Wentworth, Right-of-Way Department: <a href="mailto:ewainwright@bhe.com">ewainwright@bhe.com</a> Kris Dean, GIS Application Analyst: <a href="mailto:kdean@bhe.com">kdean@bhe.com</a> Staff Size (9)
Budget (approx)	\$212 Million in Sales
URL:	<a href="http://www.bhe.com">http://www.bhe.com</a>
Emera	<a href="http://emera.com">http://emera.com</a>

### 1.1.1 Agency Overview

Bangor Hydro is the major electrical power utility for Eastern and 'Down-East', Maine. They have 105,000 current customers among 150 municipalities. Bangor Hydro recently was acquired by Emera (Nova Scotia Power) in May of 2001. Emera has 440,000 customers served in, primarily, the Canadian Maritime Provinces. Bangor Hydro began their GIS Program in 1993 following a Feasibility Study conducted by UGC Consulting. They revisit the plan every five years.

### 1.1.2 GIS Initiatives

Beginning in 1994, they set about automating their data and creating their basemap infrastructure. During this process, they settled upon Smallworld, a GIS software company from the United Kingdom designed primarily for Utility/Linear GIS applications. They also chose a Power Outage Application called Power On (originally a product from GeoData in Colorado).

At Bangor Hydro, GIS is a main focus of their Transmission and Distribution System. It is not a novelty, it is not a pilot project, it is not viewed with suspicion; it is a core activity which has achieved mission-critical status. Data is not second-guessed but relied on for decision-making.

#### 1.1.2.1 Overview of GIS Utilization

GIS is widely in use. In addition to supporting the Outage Management System, GIS is used to support the work of 20 'Planners' in the field who design the placement of new poles in the field. Each is assigned a 'Toughbook' laptop from Panasonic with the entire 5 gig GIS database on it. Other features include GPS support which can place the planner in his/her landscape. There are established protocols in place for updating information prior to field use. A support team of 8 GIS professionals includes Application Developers who create and maintain the field applications as well as the power outage application.

### **1.1.2.2 GIS Operating Environment and Infrastructure**

Smallworld is their software of choice; they have a backbone of 10 UNIX servers, 6 NT Servers (Windows 2000), numerous desktop PCs running the GIS applications and 20 laptops running applications. T1 lines run between their four remote locations and their network is primarily 100 BaseT. Additionally, they have separate AutoCAD licenses and skilled operators.

### **1.1.2.3 GIS Data Resources and Requirements**

They have created most all of their own datasets. Their applications do rely on some smallscale contextual files such as waterbodies, political boundaries. Their requirements are mainly focused on ensuring correct connectivity between all aspects of their power distribution system and need only a certain level of scale-accuracy for all other layers.

#### **1.1.2.3.1 Spatial Data**

##### **Existing data sets include:**

All data that is publicly available (e.g. from OGIS)

Complete Transmission and Distribution systems.

Complete 'demand-point' point dataset that represents the service connections.

Complete integration and unique-id GIS link to the Banner Customer Service database.

They make some use of Census data in tabular form.

##### **Basemap features:**

1:24K USGS basemap data.

Some raster data including DOQQs

USGS DRGs, other aerial photography.

As of yet, not much remotely-sensed data such as landcover/landuse.

##### **Currently unavailable but desired data sets include:**

The ROW manager expressed an interest in parcel-composites in order to help him determine ROW issues. Of the 150-160 towns in their service area, three have parcel composites that are useful to him at the moment.

#### **1.1.2.3.2 Data Issues**

Bangor Hydro doesn't have any major data issues at this point, and even though modern data-gathering technologies such as real-time GPS have emerged, there has been no perceived need to reacquire data at higher levels of accuracy or to update existing data. However, all **new** data gathering takes advantage of 'modern' techniques. Bangor Hydro's digital datasets have proved themselves and are rarely doubted.

Bangor Hydro has put in place a pricing policy for data distribution which accounts for the intrinsic value of the data as well as accepted terms of cost-recovery.

It should be noted that some of Bangor Hydro's data gathering efforts may change due to different objectives that the new parent company, Emera, has expressed. Emera is much more concerned with vegetation management in their own Outage Management policy.

Thus, landcover, detailed tree mapping and Rights-of-Way issues will become more prominent.

#### **1.1.2.4 GIS Applications and Application Requirements**

GIS is ubiquitous in company-wide applications. They are not considered ‘GIS Applications,’ just applications. Their Customer Information System (C.I.S), Power-On, Dig-Safe, various Work-Order Management Systems are all seamlessly integrated with their GIS data. At one time they had 32 separate applications supported or developed with the GIS team.

They have continually demonstrated cost-efficiencies through their applications. For instance, they have proved that the Dig-Safe Application has reduced actual field visits to just 5% of all Dig Safe notifications.

As mentioned the ‘Power On’ Outage Management System and the CIS system are both highly transactional systems with 30-second refresh/update rates throughout the system.

Interestingly, even given the accommodating environment, strong application support and first-rate equipment, only 2 of the 20 field planners are considered aggressive users who continually push for improvement and find new and unique ways to use the technology. The majority view GIS as a necessary corporate requirement for the most part. The application team has enforced behavioral rules in the use of the GUI in order to have consistent input. Even so, there are a few who are reluctant to use the GIS at all.

#### **Planned future GIS activity and applications:**

There are a few goals they have yet to achieve: in-vehicle use of Power-On and the use of wireless technologies. They continually seek to improve their applications and to further GIS integration with work-order management and the Customer Service department.

#### **1.1.3 Other Relevant Issues**

Bangor Hydro has encouraged professional development. Ray Johnson has been President of the Maine GIS Users Group (MeGUG) and Gary Duplisea is currently a Board Member of the New England Chapter of GITA, GeoSpatial Information Technology Association.

Over the years, with varying degrees of success, they have sought students from the University of Maine’s Department of Spatial Information Science and Engineering to work with them on SmallWorld and its Object-Oriented programming language MAGIK.

Lastly, Bangor Hydro is alone in Maine with their choice of SmallWorld. For mutual support, they seek out other utility companies such as Boston Edison, Niagara-Mohawk, Providence, RI Gas, and British Columbia Gas Company.

#### 1.1.4 Major Benefits and Cost Justification

Cost Justification is an on-going activity at Bangor Hydro. As mentioned, they are able to prove a cost-efficiency with the Dig Safe program. Other cost justifications were harder to quantify but they have historically (1993) been able to make a case for these types of capital expenditures in the name of efficiency.